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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/768,062

01/24/2001

Hiroshi Tsuda

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03/26/2003

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EXAMINER

TO, BAOQUOC N

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

87

Office Action Summary

Application No.

09/768,062

Applicant(s)

TSUDA, HIROSHI

Examiner

Baoquoc N To

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

1. Claims 1-31 are presented for examination.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 04/24/02 and 01/24/01. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 2000-028299, filed on 02/04/2000.

Claim Objections

4. Claim 13 is objected to because of the following informalities: the word document is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 9-14, 20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Page (US. Patent No. 6,285,999) in view of Mukai (US. Patent No. 6,446,095).

Regarding on claim 1, Page teaches a document assigning unit weight the link relation (in order to rank, the weight is determine) and assigning link importance which indicates importance of the document based on the weight link relation to the document (document $r(A)=0.4$, $r(B)=0.3$) and $r(C)=0.4$) (col. 4, lines 49-64); and

Page does not explicitly teach an accessing unit accessing the document based on the link importance. However, Mukai teaches, "the document analysis mean 805 judges, based on link information in documents stored in the temporary document storage means 102 and contents of the conditional storage means 103, degrees of importance of data corresponding to the link information and instructs the documents means 101 to gain data having degrees not less than "2" of importance" (col. 8, lines 48-54). This teaches means 101 to access the document based the link importance that have the degrees not less than "2". Therefore, it would have been obvious to one

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ordinary skill in the art at the time of the invention was made to combine the teaching of Mukai into Page because allowing the means 101 to gain or access the document based on link importance would allow the retrieval of documents that contain most highly links.

Regarding on claims 9 and 28, Page teaches a collecting unit collecting the document from a network (col. 3, lines 56-68).

Regarding on claim 10, Page teaches link importance assigning unit causes the weight of the link relation between the documents with a high URL similarity to be decreased (col. 4, line 64).

Regarding on claim 11, Page teaches link importance assigning unit causes the document and whose URL similarity is low to be important (col. 4, lines 64-67).

Regarding on claim 12, Page teaches link importance assigning unit causes the importance of document linked from many document whose URL similarity are high to be decreased (col. 4, lines 63-65).

Regarding on claim 13, Page teaches the link importance of each document is defined as a solution of the following simultaneous linear equation (1), assuming the C_q is constant (the lower limit of the importance that depends on each page) for each $p \in \text{DOC}$ and that when a page is linked to a page q , the link weight $lw(p, q)$ is defined by the formula (2);

$$W_q = C_q + \sum_{p \in \text{Ref}(q)} W_p * lw(p, q) \quad \dots \quad (1)$$

$$Lw(p, q) = \text{diff}(p, q) / \sum_{i \in \text{Ref}(p)} \text{diff}(p, i) = 1 / \overline{\text{sim}(p, q)} \sum_{i \in \text{Ref}(p)} 1 / \text{sim}(p, i) \quad \dots \quad (2)$$

Wherein $\text{DOC} = \{p_1, p_2, \dots, p_N\}$ is a set of documents calculated for the link importance; W_p is the link importance of the page p ; $\text{Ref}(p)$ is a set of pages linked from the page p ; $\text{Ref}(p)$ is a set of pages linking to the page p ; $\text{sim}(p, q)$ is the URL similarity of the pages p and q ; $\text{diff}(p, q) = 1/\text{sim}(p, q)$ is the difference (col. 6, lines 5-10).

Regarding on claim 14, Page teach the URL similarity is determined based on characters of a URL containing a server address (col. 4, lines 60-63).

6. Claims 2 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Page (US. Patent No. 6,285,999) in view of Mukai (US. Patent No. 6,446,095) and further in view of Fujii et al. (US. Patent No. 6,144,973).

Regarding on claim 2 and 21, Page teaches the document searching apparatus as set forth in claim 1, Page does not teaches link importance assigning unit includes:

A URL similarity calculating unit calculating a URL similarity that is a similarity of URLs (Uniform Resource Locators) that represent the document, wherein said link importance assigning unit calculates the link importance based on the URL similarity and the link relation of the document (col. 4, lines 49-64). On the other hand, Fujii teaches, "if a URL is included the degree of similarity between document A and ancestor document of document A is calculated (step S506)" (col. 8, line 67 and col. 9, lines 1-2). This teaches the claimed a URL similarity calculating unit calculating a URL similarity that is similarity of URLs (Uniform Resource Locators) that represent the document. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Fujii and Page because utilizing the calculated URL similarity as taught in Fujii would allow the system to calculate the similarity to obtain the documents that match criteria to allow the user to access later when viewing.

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7. Claims 3-4, 6, 22-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Page (US. Patent No. 6,285,999) in view of Mukai (US. Patent No. 6,446,095) and further in view of Chong et al. (US. Patent No. 6,366,908).

Regarding on claims 3 and 22, Page and Mukai teach the subject matter except for a keyword extracting unit extracting text parts from the documents and extracting a keyword from the document contents. However, Chong teaches, "the keyword extracting device 12" (col. 4, lines 24-25). In addition, Chong teaches, "the keyfact index device 12 indexes the extracted keyfacts with frequency information" (col. 4, lines 66-67). This teaches the claimed keyword extracting unit extracting parts from the document and extracting keyword from the document. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Mukai and Page and Chong because extracting of part of text and the keywords would allow the system to compare the keywords requested with the extracted part of text and the keywords stored in the database in order to retrieve the document.

Regarding on claims 4 and 23, Page and Mukai do not explicitly teach keyword extracting unit calculates an occurrence frequency of the keyword in the document, and wherein said keyword extracting unit further comprises:

a keyword- document correlation calculating unit calculating the correlation of the keyword and the document based on the link importance and the occurrence frequency of the keyword. However, Page teaches the link importance. On the other hand, Chong teaches, "the frequency calculating means calculates a frequency of various keyfacts. The various keyfacts are included in the document collection, and the document frequency is the number of documents contained keyfacts" (col. 2, lines 55-59). This teaches the calculation of keyword and frequency of the keywords in the document. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Page and Mukai and Chong because calculating the correlation of keywords and the document based on link importance and the occurrence frequency of the keyword would allow the system to retrieve more precise search results.

Regarding on claims 6 and 25, Page teaches the subject matter except for a document type determining unit determining a document type of the document based on the URL similarity, the number of links from the document (back link) (col. 4, lines 1-2), and the number of links to the content (col. 4, lines 2-3), wherein said keyword – document correlation calculating unit selects the document based on the documents type and calculates the correlation for the selected document (col. 4, lines 5-10).

8. Claims 5 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Page (US. Patent No. 6,285,999) in view of Mukai (US. Patent No. 6,446,095) and further in view of Chong et al. (US. Patent No. 6,366,908) and further in view of Mighdoll et al. (US. Patent No. 6,505,232).

Regarding on claims 5 and 24, Page and Mukai and Chong teach the subject matter except for a monitoring unit monitoring accesses from a user and generating an access log. However, Mighdoll teaches, "the server receives the request from the user of initiating access to the server, the log-in service obtains information from the user database. This information includes the access privileges of the authorized user in relation to the other services available on the server. The server then generates an information packet containing this information, and transmits the information packet to the client" (col. 2, lines 45-54). This teaches the claimed monitoring the accesses from user and generating the access log. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Page and Mukai and Chong and Mighdoll because monitoring and generating the access log would allow the authorized user to access the system and also allow the system to keep track of the search records.

9. Claims 7-8 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Page (US. Patent No. 6,285,999) in view of Mukai (US. Patent No. 6,446,095) and further in view of Chong et al. (US. Patent No. 6,366,908) and further in view of Brown et al. (US. Patent No. 6,026,398).

Regarding on claims 7 and 26, Page and Mukai and Chong do not explicitly teach an index creating unit creating an index for accessing the document corresponding to pronunciation characters or spelling of the extracted keyword. However, Brown teaches, "these terms may be quickly compared against an index of terms created from the database" (col. 8, line 67). This teaches creating index. In addition, Brown also teaches, "the algorithm retains the first letter of each word, it may miss matches between terms such as "fish" and "Phish", which are phonetically required" (col. 3, lines 5-9). This teaches the search mainly conduct may on the pronunciations and same as the index. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Page and Mukai and Chong and Brown because allowing the system to create the index by pronunciation give the system more flexibility to conduct the search.

Regarding on claims 8 and 27, Page and Mukai and Chong do not explicitly teach the subject matter except for a selecting unit allowing the user to select a portion of the pronunciation characters or spelling of the keyword, wherein said index creating unit places less than predetermined number of documents highly correlated with the keyword in the index based on the correlation calculated by said keyword-document correlation calculating unit, and wherein said accessing unit accesses the document based on the selected keyword. However, Brown teaches for a selecting unit allowing the user to select a portion of the pronunciation characters or spelling of the keyword, wherein said index creating unit places less than predetermined number of documents highly correlated with the keyword in the index based on the correlation calculated by said keyword-document correlation calculating unit, and wherein said accessing unit accesses the document based on the selected keyword (col. 10, lines 26-38).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Page and Mukai and Chong and Brown because allowing the system to create the index by pronunciation give the system more flexibility to conduct the search.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kutoba (US. Patent No. 5,992,737) in view of Page (US. Patent No. 6,285,999).

Regarding on claim 15, Kutoba teaches a document creating apparatus for creating an index of a document based on the link relation, comprising:

a keyword extracting unit extracting a keyword from the document (col. 1, lines 19-22);

an index creating unit creating a index for accessing the keyword based on pronunciation characters or spelling of the extracted keyword (col. 1, lines 17-19); and

an accessing unit accessing document assigned the link importance corresponding to the keyword when the pronunciation characters or spelling of the keyword are selected from the index (col. 20, lines 23-27).

Kutoba does not explicitly teach a link importance assigning unit assigning a link importance to the document based on the link relation. However, Page teaches, "Document A has a single back link to document C and this is the only forward link of document C, so $r(A) = r(C)$... and $r(A) = 0.4$ " (col. 4, lines 51-67). This teaches the document A has link importance of 0.4. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Kutoba and Page in order to provide the important document correspond to those document to which the most attention is directed.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kutoba (US. Patent No. 5,992,737) in view of Page (US. Patent No. 6,285,999) and further in view of Fujii et al. (US. Patent No. 6,144,973)

Regarding on claim 16, Kutoba teaches the document index creating apparatus as set forth in claim 15. Kutoba does not teach link importance assigning unit includes:

A URL similarity calculating unit calculating a URL similarity that is a similarity of URLs (Uniform Resource Locators) that represent the location of the documents in a network, wherein said link importance assigning unit calculates the link importance based on the URL similarity and the link relation of the document. However, Page teaches the link importance assigning unit calculates the link importance based o the link relation of the document (col. 4, lines 51-67) except for the similarity unit calculating unit calculating a URL similarity that is similarity of the URLs (Uniform Resource locator) that represent the location of the documents in a network. On the other hand, Fujii teaches, "if a URL is included the degree of similarity between document A and ancestor document of document A is calculated (step S506)" (col. 8, line 67 and col. 9, lines 1-2). This teaches the claimed a URL similarity calculating unit calculating a URL similarity that is similarity of URLs (Uniform Resource Locators) that represent the document. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Fujii and Page and Kutoba because by calculating the similarity of URLs and the link importance would allow the system to retrieve the importance pages in response to the user requests.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kutoba (US. Patent No. 5,992,737) in view of Fujii et al. (US. Patent No. 6,144,973).

Regarding on claim 17, Kutoba teaches a document index creating apparatus for creating an index of a document group having a link relation, comprising:

a keyword extracting unit extracting a keyword from the document (col. 1, lines 19-22); and

an index creating unit creating an index for accessing the document corresponding to pronunciation characters or spelling of the extracted keyword based on the link importance (col. 1, lines 17-19).

an accessing unit (access) accessing document assigned the link importance corresponding to the keyword when the pronunciation characters or spelling of the keyword are selected from the index (col. 20, lines 23-27).

Kutoba does not explicitly teach a link importance assigning unit assigning a link importance to the document depending on whether or not URL of the document are similar. However, Fujii teaches, "a judgment is made to specified the related documents by determining the depth of link between each of the documents specified by URLs and the first requested document, thereby making it possible to selectively receive only documents with high degree of association in advance" (col. 8, lines 34-38). This teaches the document which has highest depth is importance document. In addition, Fujii also teaches, "if a URL is included the degree of similarity between document A and ancestor document of document A is calculated (step S506)" (col. 8, line 67 and

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col. 9, lines 1-2). This teaches the claimed a URL similarity calculating unit calculating a URL similarity that is similarity of URLs (Uniform Resource Locators) that represent the document. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of Fujii and Kutoba because assigning the link importance based on the URL similarity would allow the system to deliver results of one document and other document that have link to the similarity URLs.

13. Claims 18-19 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Page (US. Patent No. 6,285,999) in view of Logue et al. (US. Patent No. 6,330,606).

Regarding on claims 18, 29 and 31, Page teaches a link list creating system for creating a link list for a document group having a link relation, comprising:

a collecting unit collecting the documents from a network (col. 3, lines 56-63);

a link importance assigning unit assigning a link importance as of the document an importance calculated based on the link relation to the documents (col. 4, lines 49-64); and

an index (index) creating unit creating a link list for listing less than a predetermined number of links to the document based on the link importance and the particular characteristic of the character string of the URL (col. 8, lines 14-17).

Page does not explicitly teach a URL character string determining unit determining a URL having a particular characteristic of a character string from the documents. However, Logue teaches, "the list of URL pattern 510 may be a list of strings identifying the initial portions (e.g., prefixes) of URLs to be tracked. In this example, the proxy 400 tracks hits for documents identified by URLs with a prefix that matches any of the URL patterns 510 specified in one of the site tracking list record 505" (col. 6, lines 43-48). This teaches the URL determine unit comparing the URL of the input with the URL of the document. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching of

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Logue and Page because comparing the match between the input URL and the URL in the documents would allow the user to retrieve the document that contains URL.

Regarding on claims 19 and 30, Page teaches a document type determining unit determining a document type of the document based on a URL similarity representing the similarity of between URLs of the documents, the number of links to the document (back links) (col. 4, lines 1-2), and the number of links from the document (forward link) (col. 4, lines 2-3), wherein said index creating unit selects the document based on the document type and creates the link list of the selected document (col. 8, lines 14-16).

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Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is (703) 305-1949 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached at (703) 305-4393.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is assigned are as follow:

- (703) 746-7238 [After Final Communication]
- (703) 746-7239 [Official Communication]
- (703) 746-7240 [Non-Official Communication]

Hand-delivered responses should be brought to:

Crystal Park II
2121 Crystal Drive
Arlington, VA 22202
Fourth Floor (Receptionist).

Baoquoc N. To

March 21, 2003


SHAHID AL ALAM
PATENT EXAMINER